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TECHNICAL NOTES
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ALASKA FOREST RESEARCH CENTER
U. S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

No. 7 JUNEAU, ALASKA

Thinning Second-Growth Hemlock-Spruce for Pulpwood

Approximately 53 cords per acre of pulpwood can be thinned from 96-year-old stands of hemlock-spruce in Southeast Alaska. This is a third of the stand on good sites. The reserved stand consists of selected crop trees left to grow to sawtimber size. Forty cords per acre is the average total net volume of the old-growth climax forest covering most of Southeast Alaska.

These second-growth hemlock-spruce forests are capable of producing high-volume, high quality sawtimber and peeler logs. If some of the better sites are thinned for pulp, leaving the best crop trees, sawtimber production may be hastened. Such partial cutting may be uneconomical now, but by the time vast areas of the climax are cut and revert to the faster growing second-growth such operations may be highly practical.

The tests here reported include two thinning methods: Thinning to 120 crop trees per acre and thinning to two-thirds of the basal area. Felling was done by a two-man crew using a light chain saw. As no market now exists for this small material the trees were left on the ground.

Felling time averaged 1.69 cords per crew hour, varying from 1.21 to 2.33 cords, depending mostly on stand size and density. The greater the number of trees in the smaller diameter classes, the fewer the cords cut per hour.

If these stands were merely reserved for sawtimber production without thinning, the 53 cords would probably be lost as mortality before maturity of the stand for sawtimber. It remains to be seen whether windfall will be serious and whether accelerated growth will occur as a result of thinning.

The amount thinned, time required and residual stands per acre are shown in the following table:

Treatment	Thinning per acre				Felling	Residual stand per acre			
	Av. dbh	No. trees	Cu. Vol.	Cords 1/	Cords per hr.	Av. dbh	No. trees	Cu. Vol.	Cords
Area 1									
120 crop trees	13.6	116	4,797	47.9	1.5	18.5	120	9,940	103.8
2/3 B.A.	12.0	130	3,863	37.1	2.3	15.7	174	10,105	104.1
Area 2									
120 crop trees	9.4	442	8,844	77.4	1.2	15.8	120	7,869	81.1
2/3 B.A.	10.4	252	5,534	51.3	1.7	16.8	172	11,852	122.9

1/ Trees 7 inches dbh to 6-inch top i.b.

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